

An Annotated List of the Insect Fauna
of Douglas Fir (*Pseudotsuga mucronata* Rafinesque)
in the Northern Rocky Mountain Region

by

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This list is a record of all the insects which have been found in or on Douglas fir in the Northern Rocky Mountain region. It comprises insects which feed upon the tree, as well as the parasites and associates of these insects. Of the 153 species listed, 102 were collected by the writer while making a study of the Douglas fir beetle (*Dendroctonus pseudotsugae* Hopk.). The remainder are records in the Forest Insect Field Laboratory at Coeur d'Alene, Idaho of collections made by J. C. Evenden, R. E. Balch,¹ H. J. Rust, and D. DeLeon.²

¹ Balch, R. E. The fir tussock moth (*Homocidus pseudotsugae* McD.) Jour. Econ. Ent. 25:6:1143-1148, 1932.

² DeLeon, Donald An annotated list of the parasites, predators, and other associated fauna of the mountain pine beetle in western white pine and lodgepole pine. Can. Ent. 66:3:51-61, 1934.

Most of the specimens were determined by specialists whose names are abbreviated and shown in double parentheses following the names of the insects which they determined. The names of the specialists and their abbreviations are as follows:

J. M. Aldrich	A.	W. S. Fisher	Fl.
H. G. Barber	Ba.	J. W. Folsom	Fo.
H. W. Blackman	Bl.	A. B. Gahan	Ga.
J. C. Bradley	Br.	C. T. Greene	Gr.
H. E. Burke	Bk.	Carl Heinrich	H.
August Busck	Bs.	William Middleton	Mi.
A. H. Coudell	Ca.	C. F. W. Muesebeck . . .	Mu.
E. A. Chapin	Ch.	G. A. Sandhouse	Sa.
J. F. G. Clarke	Cl.	Alan Stone	St.
F. C. Craghead	Cr.	L. H. Weld	W.
H. A. Cushman	Cu.		

There no name appears the specimen was identified by comparison with previously identified material in the laboratory collection at Coeur d'Alene, Idaho.

ORDER COLLEMBOLA

Family Entomobryidae

Entomobrya sp. ((Fo.)). This insect is common under the bark of trees attacked by the Douglas fir beetle from the time the beetle reaches the adult stage in August, until it emerges during May of the following year.

ORDER CORRODENTIA

Family Psocidae

Amphixerontia maculosus Banks ((Ca.)). Adults of this insect were reared from bark infested with the Douglas fir beetle. Emergence occurred during July.

ORDER HOMOPTERA

Family Adelgidae

Adelges abolevi Gillette. This well-known schid feeds on the foliage of Douglas fir. Non-migrant adults were collected during September.

ORDER HEMIPTERA

Family Aradidae

Aradus gebilis Uhler. ((Ba.)). This insect is believed to feed on the larvae of the Douglas fir beetle, as well as other larvae beneath the bark. Adults were reared from bark during July.

A. proboscidatus Walker ((Ba.)). Like the preceding species, this insect is believed to be a facultative predator. Adults were reared from bark during July.

ORDER NEUROPTERA

Family Chrysopidae

Chrysopa plorabunda Fitch ((Cs.)). Large groups of this insect were found during May and June beneath the bark of trees attacked by the Douglas fir beetle during the previous season. The large groups indicate that these trees were being used for winter hibernation.

ORDER LEPIDOPTERA

Family Olethreutidae

Barbara colfaxiana colfaxiana Kearf. ((H.)). The Douglas fir cone moth destroys a fairly large percentage of Douglas fir cones. Infested cones fall from the trees during mid-summer and the moths emerge during the fall. In some cases it was found that the moths spent two years in the cones before emerging.

Family Tortricidae

Diapocle furiferana Clem. ((H.)). The spruce budworm has killed many trees in the northern Rocky Mountain region by completely defoliating them. Epidemics of this insect are usually followed by epidemics of the Douglas fir beetle, which attacks and kills many additional trees.

Peronea varians Fernald. ((Ds.)). This insect is a defoliator associated with the spruce budworm. Adults were collected in August and females were observed ovipositing during September.

Neovitis canosaria Wlk. ((Cl.)). Adults of this moth were reared from Douglas fir foliage infested with the Douglas fir tussock moth. Emergence occurred in August.

Family Oecophoridae

Malacellina coloradella Wlsm. ((Bs.)). This insect probably used the Douglas fir bark for hibernation purposes. Adults were reared from bark in July.

Family Ageriidae

Aceria novaeboracensis Hy. Edw.

Tegmenia sequoiae (Hy. Edw.) These two aegerids are Douglas fir pitch moths and cause the large pitch balls on the lower trunk of the tree. Larvae were collected from pitch masses throughout the season.

Family Lymantriidae

Hemarocampa pseudotsugata McD. ((Cl.)). Sporadic outbreaks of the Douglas fir tussock moth have occurred in various parts of the northern Rocky Mountain region. Adults are common in infested areas during September.

ORDER DIPTERA

Family Ceratopogonidae

Harpinervia aurea Mall. ((St.)).

Z. simulata Halley ((St.)). These two flies are common beneath the bark of trees infested with the Douglas fir beetle. They are probably not predacious. Adults emerged from bark in June.

Family Sciariidae

Sciara sp. ((Gr.)). Common beneath the bark of trees infested with the Douglas fir beetle. Adults emerged from bark in June.

Family Cecidomyiidae

Winnertzia sp. ((Gr.)). Larvae of this insect are gregarious in habit, and are common beneath the bark of trees infested with the Douglas fir beetle. They apparently feed on dead insects. Adults were reared from bark in July.

Family Xylophagidae

Xylophagus abdominalis Lw. ((Gr.)). This insect is a facultative predator. Although found feeding on Douglas fir beetle larvae, it is more commonly found associated with woodborers. Adults were reared from bark in June, and females were collected, ovipositing during June and July.

Family Eupidiidae

Tachyneta fenestrata Say. ((Gr.)). Adults are common during June on the bark of trees infested with the Douglas fir beetle.

Metaterus aldrichi Wheeler ((Gr.)). This fly is the second most important predator which attacks the Douglas fir beetle. Adults were common on the bark of newly infested trees during May and June. Larvae are found in these trees throughout the period while they are inhabited by the beetle.

Family Phoridae

Mesaspila minor Zeff. ((Gr.)).

M. sp. near minor ((Gr.)). Common in trees infested with the Douglas fir beetle. Adults were reared from bark in June.

Family Tachinidae

Actia pilipennis Fall. ((A.)).

Macronia saundersii Hall. ((A.)).

Memorilla floralis Fall. ((A.)). Adults of these three tachinids emerged in August from chrysalids of the spruce budworm.

Family Lonchaeidae

Lonchaea corticia Taylor ((A.)). This fly is the most important predator which feeds on the Douglas fir beetle. Adults are abundant during August. Larvae are present in infested trees from August until July of the following year. The small, red puparia are found during June and July.

ORDER COLEOPTERA

Family Silphidae

Acetidium revolvens Lec. ((Fl.)). This small, black beetle probably feeds on refuse material beneath the bark of trees infested with the Douglas fir beetle. Adults were plentiful during May and June beneath the bark of trees which had been attacked the previous year.

Family Staphylinidae

Nudobius purpureus Casey ((Ch.)).

Quedius marginalis Maklin ((Ch.)). These two rove beetles are facultative predators. Adults can be found during fall and spring beneath the bark of trees containing adults of the Douglas fir beetle.

Rupalus nigrellae Lec. ((Ch.)).

Onalium pusillum Grav. ((Ch.)).

Atheta sp. ((Ch.)). These three species of small rove beetles are among the first insects to appear beneath the bark of trees attacked by the Douglas fir beetle. Adults are common throughout the season.

Family Cucujidae

Cucujus clavipes var. puniceus Mann. The adults of this predator were common on the bark of trees being attacked by the Douglas fir beetle during May.

Family Cleridae

Enoclerus lecontei Wole.

E. aphegus Fabr.

Thanosinus dubius Fabr. Both the adults and larvae of these three insects are predacious. The adult clerids feed on the adult Douglas fir beetles as they attack the trees, and the clerid larvae feed on the immature stages of the beetle beneath the bark. E. aphegus is the most abundant, T. dubius next in abundance, and E. lecontei is rather rare in Douglas fir.

Family Elateridae

Elaeter nigrinus Host. ((Pl.)). Adults were collected during June on the bark of trees attacked by the Douglas fir beetle during May.

Family Suprestidae

Chrysobothris carinipennis Lec. ((Bk.)). Larvae were found beneath the bark during October.

C. pseudotsugae Van Dyke ((Bk.)). Females were ovipositing during July.

C. trinervis Kby. ((Bk.)). Females were ovipositing during July on a tree which had been wind-thrown during the previous winter.

Suprestis langi Mann. Females were ovipositing during July in the top of a wind-thrown tree.

S. maculiventris var. rusticatus Kirby ((Pl.)). Females were ovipositing in a wind-thrown tree during July.

Melanophila drummondi Kirby. Males and females were abundant during July on trees attacked by the Douglas fir beetle in May.

Anthaxia ceneogaster Cast. ((Bk.)). Adults were reared during July from bark also infested with the Douglas fir beetle.

A. deleta Lec. ((Fl.)). Adults were reared from small branches during May and June.

Family Histeridae

Isomalus manicus Gay. ((Ba.)). Probably predacious on small insects beneath the bark. Adults are common during August in trees attacked by the Douglas fir beetle in May.

Family Colydiidae

Deretaphrus oregonensis Horn. ((Fl.)). Adults were found beneath the bark of trees which had been killed by the Douglas fir beetle two years previously.

Family Ostomatidae

Temnochila virescens var. chlorodes Mann. This predacious beetle is not very common in Douglas fir. The larvae feed on the immature stages of the Douglas fir beetle. Adults were collected during August.

Family Cryptophagidae

Cryptophagus maximus Blake ((Fl.)). Adults were found during July beneath the bark of trees killed by the Douglas fir beetle during the previous season.

Salpingus tarsalis Casey ((Fl.)). Adults were found during June beneath the bark of trees killed by the Douglas fir beetle during May of the previous year.

Atomaria sp. ((Vi.)). One adult was collected during late June in a tree attacked by the Douglas fir beetle during the early portion of the same month.

Family Nitidulidae

Agroeca truncatella Mann. ((Ch.)). Adults and larvae of this insect are common from July, to June of the following season, beneath the bark of trees killed by the Douglas fir beetle during the current season.

Family Rhizophagidae

Rhizophagus dimidiatus Mann. ((Vi.)). This is a very common insect beneath the bark of trees killed by the Douglas fir beetle. Both adults and larvae can be found from July to the following June in trees attacked during the current season. Adults were observed in groups where conidia of blue stain fungi were numerous.

Family Ciliidae

Ennearthron sp. ((Vi.)). Adults were collected in November from the sporophores of Polyporus volvatus.

Family Lathridiidae

Exicmus sp. ((Vi.)). Adults were reared during August from bark also infested with the Douglas fir beetle.

Family Tenebrionidae

Platydemus oregonense Lec. ((Vi.)). Adults were collected during June from sporophores.

Hymenophloeus substriatus Lec. ((Ch.)).

H. sp. ((Ch.)). The adults and larvae of these two insects are probably predaceous, feeding on the smaller insects beneath the bark of trees attacked by the Douglas fir beetle. Adults are common during June in trees killed during the previous season.

Family Melandryidae

Zilora nuda Prov. ((Ch.)). Adults were reared during June from bark infested with the Douglas fir beetle.

Serropalpus barbatulus Schl. ((Ch.)). Adults were reared during July 1930 from the wood of trees killed by the Douglas fir beetle during May 1929. The larvae of this insect mine the sawwood and pupate in a pupal chamber approximately one-half inch beneath the surface of the wood.

Family Cerambycidae

Hylotraneus ligneus Fab. ((Ch.)). Larvae were collected in August from a tree attacked by the Douglas fir beetle during the preceding May.

Lentura oblitterata Hald.

Angolarda aspera Lec.

A. canaliculata Oliv.

Phrynoderes dimidiatus Koy. The adults of these four cerambycids were collected during August, when females were ovipositing in trees attacked by the Douglas fir beetle during May of the current season.

Tetropium velutinum Lec. Adults were reared from bark during July.

Samnolus nicolas White ((F1.)). Adults were reared from fuel wood during the winter.

Callidium antennatum var. hesperum Casey. Females were collected during May and June when they were ovipositing on a wind-thrown tree being attacked by the Douglas fir beetle.

Xylotrechus undulatus Say. Adults were reared from wood during June. Females were also collected during June, ovipositing in trees recently attacked by the Douglas fir beetle.

Olytus planifrons Lec. ((F1.)).

Monochamus notatus Drury ((F1.)).

Acanthocinus obliquus Lec. Adults were collected during July and August on the bark of trees attacked by the Douglas fir beetle during the current season.

Heloporus marginatus Lec. ((F1.)). Adults were reared from Douglas fir branches during May.

Family Scolytidae

Scolytus ventralis Lec. ((B1.)).

S. monticolae Sw. ((B1.)).

S. unispinosus Sw. ((B1.)).

S. laugae Sw. ((B1.)).

Hylastes nigrinus Mann. ((B1.)).

Pseudohylesinus nebulosus Lec. ((B1.)).

Orthotomicus caelatus Richk. ((B1.)). This group of bark beetles attacks during June the tops and large branches of trees attacked by the Douglas fir beetle in May. S. tsugae has been found to kill small areas of Douglas fir reproduction.

Polygraphus rufipennis Kirby. ((B1.)).

Phthorophloeus puberulus Lec. ((B1.)). Attacks of these two bark beetles were found during July in limbs and small tops of trees attacked by the Douglas fir beetle in May.

Dendroctonus pseudotsugae Hook. ((B1.)). The Douglas fir beetle has become a serious pest in the northern Rocky Mountain region. A separate paper is being prepared concerning it.

D. valens Lec. ((B1.)). This insect attacks during June the bases of trees attacked by the Douglas fir beetle during May.

Pityrothorus pseudotsugae Sw. ((B1.)).

Pityrothorus elegans Sw. ((B1.)). These two bark beetles attack the tops of trees at the time the trees are being attacked by the Douglas fir beetle in May.

Trypodendron bivittatum Kirby. ((B1.)). This ambrosia beetle attacks the wood at the bases of trees killed by the Douglas fir beetle. Attacks occur during May and June.

Lyrocoetes affaber Mann. ((B1.)).

D. pseudotsugae Sw. ((B1.)). New attacks of these two insects were found in a wind-thrown tree during June.

Family Iucanidae

Ceruchus striatus Lec. Adults were collected from decaying logs.

ORDER HYMENOPTERA

Family Siricidae

Urocerus albicornis (Fab.) ((Mi.)).

U. californicus Nort. ((Br.)).

Sirix juvenis race ovatus Fab. ((Ca.)).

Seris morrisoni (Cress.) ((Ca.)). Adults were collected during August. Females were ovipositing at this time in trees killed by the Douglas fir beetle during the preceding year.

Family Aulacidae

Aulacus editus Cress. ((Cu.)). Adults were reared from bark during June. This insect is probably a parasite of cerambycid and buprestid larvae.

A. abdominalis Cress. ((Cu.)). Females were collected during August when they were ovipositing on cerambycid and buprestid larvae.

Family Evanionidae

Pamexiaschia sp. near minnesotae Grasl. ((Cu.)). Females were collected during June when they were ovipositing on cerambycid and buprestid larvae.

Family Ichneumonidae

Mesochorus ontario Cress. ((Cu.)).

Itepeletia montana Gush. ((Cu.)). Adults of these two parasites were reared from cocoons of the Douglas fir tussock moth during August.

I. atrocoxalis (Cress.) ((Cu.)).

I. senilis Cosh. ((Cu.)). Adults of these two parasites emerged in August from chrysalids of the spruce budworm.

Polistes indicator (Cress.) ((Cu.)). Adults were collected during June in an infestation of the fir tussock moth.

P. atrocoxalis Ashm. ((Cu.)). Reared during August from chrysalids of the spruce budworm.

Idectis sp. ((Cu.)). Adults were collected during July in an infestation of the fir tussock moth.

Imachia sp. ((Cu.)). Parasite of the fir tussock moth. Adults were collected during June.

Calliochilus comstockii (Cress.) ((Cu.)).

C. new species ((Cu.)). Adults of these two parasites were reared from cones infested with the Douglas fir cone moth. Emergence occurred during August.

Camponotus n. sp. ((Cu.)). Adults were collected during August on bark of trees infested with the Douglas fir beetle.

Conoblasta fusiferanae Vier. ((Cu.)).

Ephialtes sanguineus (Cress.) ((Cu.)).

Herpestomus variolus (Cress.) ((Cu.)). These three parasites of the spruce budworm were reared from pupae during August.

Proctos ovetrise Roh. ((Cu.)). Emerged during May and June from cones infested with the Douglas fir cone moth.

Olyta funiferana Vier. ((Cu.)). Reared from larvae of the spruce budworm during August.

Family Braconidae

Microbracon xanthonotus Ashm. ((Cu.)). Emerged during August from cocoons of the Douglas fir tussock moth.

M. rhyacioniae Mues. ((Mu.)). Emerged during May and June from cones infested with the Douglas fir cone moth.

Ananteles laeveyresiae Vier. ((Mu.)). Emerged during June from cones infested with the Douglas fir cone moth.

Atanycolus montivagus (Cress.) ((Mu.)).

A. n. sp. near montivagus ((Mu.)). Ovipositing during May and June in trees containing Huprestid larvae.

A. sp. ((Mu.)).

Doryctes fortus (Prov.) ((Mu.)). Reared from white, papery cocoons found in larval galleries of buprestids.

Coeloides brunneri Vier. ((Mu.)).

Coeloides dendroctoni Cush. ((Cu.)).

Coeloides apolyti Cush. ((Cu.)).

Coeloides n. sp. ((Mu.)). These four species are parasitic upon the Douglas fir beetle. C. brunneri is the most important parasite of this beetle and is the most abundant of the four species listed.

Macrocentrus aegeriae Roh. ((Mu.)).

Exochus insularis (Cress.) ((Cu.)).

Helcon occidentalis (Cress.) ((Mu.)).

H. yukonensis Ash. ((Mu.)). Females of these four species were found ovipositing on cerasbyoid and buprestid larvae during August.

Rhyssalus perausagoria (Linn.) ((Cu.)).

R. lineolata (Wby.) ((Cu.)). These two braconids are parasitic upon Serropalpus and horntail larvae. Adults emerged from larval tunnels during July.

Microplitis sp. ((Cu.)). Probably a parasite of the Douglas fir tussock moth. Adults were collected during June in an infestation of the moth.

Deuteroxorides occidentalis Cress. ((Cu.)). Parasitic upon buprestid larvae. Adults emerged during May.

Odontomerus tibialis Cush. ((Cu.)). Males were collected during June and females were found ovipositing during July on larvae of Tetropium.

Spathius brunneri Vier. ((Mu.)). Parasite of Scolytus. Adults emerged in large numbers during June from bark infested with Scolytus ventralis.

Opius n. sp. ((Cu.)). Parasitic upon Pseudohylesinus nebulosus. Adults emerged from bark during June.

Family Callinomidae

Callinome sp. near occidentale Huber ((Ga.)). Emerged during May from cones infested with the Douglas fir cone moth.

Monodontomerus dentipes Koh. ((Ga.)). Adults were collected during August in an infestation of the Douglas fir tussock moth.

Family Eurytomidae

Eurytoma nissodis Gir. ((Ga.)). Parasitic upon Coeloides. Adults emerged from Coeloides hibernaculae during August.

Family Pteromalidae

Amblynerus verditox (Nord.) ((Ga.)). Emerged during May from cones infested with the Douglas fir cone moth.

Ceclidostes dendroctoni Ashm. ((Ga.)).

Pachyceras cecopomastri Hatz. ((Ga.)). These two pteromalids are parasitic upon larvae of the Douglas fir beetle. Adults are common during late July and early August.

Microgaster boucheanus Hatz. ((Ga.)). Emerged during August from cocoons of the Douglas fir tussock moth.

Pachyneuron allograpiae Ashm. ((Ga.)). Adults were collected during July in an infestation of the Douglas fir tussock moth.

Perniphora sp. ((Ga.)). Parasitic upon larvae of Trypodendron bivittatum. This parasite emerged in May from larval cradles of the Amorosi beetle.

Family Eulophidae

Blacus cetrice Gir. ((Ga.)). Emerged during May from cones infested with the Douglas fir cone moth.

Pleurotropis n. sp. ((Ga.)). Adults emerged during August from Microgaster xanthonotus.

Family Trichogrammatidae

Trichogramma minuta Riley ((Ga.)) Emerged during September from eggs of the spruce budworm.

Family Diapriidae

Calenus stricornis Ashm. ((Mu.)). Emerged during August from puparia of Lonchaea corticis.

Hemilexis californica Ashm. ((Mu.)). Emerged during July from larvae of Porcupomyia.

Plectanpleura n. sp. ((Ga.)). Females were found ovipositing in cones infested with Douglas fir cone moth larvae.

Family Ibalidae

Ibalia ensiger Nort. ((W.)). One adult collected during June on bark of Douglas fir tree infested with the Douglas fir beetle.

Family Figitidae

Anacharis sp. ((W.)). Collected on branch tree infested with larvae of the Douglas fir tussock moth.

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